

REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION (9 VAC 5 CHAPTER 10)

9 VAC 5 CHAPTER 10.  
GENERAL DEFINITIONS.

9 VAC 5-10-20. Terms defined.

"Volatile organic compound" means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

1. This includes any such organic compounds which have been determined to have negligible photochemical reactivity other than the following:

- a. Methane;
- b. Ethane;
- c. Methylene chloride (dichloromethane);
- d. 1,1,1-trichloroethane (methyl chloroform);
- e. 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
- f. Trichlorofluoromethane (CFC-11);
- g. Dichlorodifluoromethane (CFC-12);
- h. Chlorodifluoromethane (HCFC-22);
- i. Trifluoromethane (HFC-23);
- j. 1,2-dichloro 1,1,2,2,-tetrafluoroethane (CFC-114);
- k. Chloropentafluoroethane (CFC-115);
- l. 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);
- m. 1,1,1,2-tetrafluoroethane (HFC-134a);
- n. 1,1-dichloro 1-fluoroethane (HCFC-141b);

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- o. 1-chloro 1,1-difluoroethane (HCFC-142b);
- p. 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
- q. Pentafluoroethane (HFC-125);
- r. 1,1,2,2-tetrafluoroethane (HFC-134);
- s. 1,1,1-trifluoroethane (HFC-143a);
- t. 1,1-difluoroethane (HFC-152a);
- u. Parachlorobenzotrifluoride (PCBTF);
- v. Cyclic, branched, or linear completely methylated  
siloxanes;
- w. Acetone;
- x. Perchloroethylene (tetrachloroethylene);
- y. 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-  
225ca);
- z. 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-  
225cb);
- aa. 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
- bb. Difluoromethane (HFC-32);
- cc. Ethylfluoride (HFC-161);
- dd. 1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
- ee. 1,1,2,2,3-pentafluoropropane (HFC-245ca);
- ff. 1,1,2,3,3-pentafluoropropane (HFC-245ea);
- gg. 1,1,1,2,3-pentafluoropropane (HFC-245eb);

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- hh. 1,1,1,3,3-pentafluoropropane (HFC-245fa);
- ii. 1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
- jj. 1,1,1,3,3-pentafluorobutane (HFC-365mfc);
- kk. Chlorofluoromethane (HCFC-31);
- ll. 1 chloro-1-fluoroethane (HCFC-151a);
- mm. 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
- nn. ~~1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane~~  
(~~C<sub>4</sub>F<sub>9</sub>OCH<sub>3</sub>~~) 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C<sub>4</sub>F<sub>9</sub>OCH<sub>3</sub> or HFE-7100);
- oo. ~~2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-hepta-~~  
~~fluoropropane ((CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OCH<sub>3</sub>)~~ 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-hepta-  
fluoropropane ((CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OCH<sub>3</sub>);
- pp. ~~1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane~~  
(~~C<sub>4</sub>F<sub>9</sub>OC<sub>2</sub>H<sub>5</sub>~~) 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C<sub>4</sub>F<sub>9</sub>OC<sub>2</sub>H<sub>5</sub> or HFE-7200);
- qq. ~~2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-hepta-~~  
~~fluoropropane ((CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub>)~~ 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-hepta-  
fluoropropane ((CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub>);
- rr. Methyl acetate; and
- ss. ~~1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-~~  
~~C<sub>3</sub>F<sub>7</sub>OCH<sub>3</sub>) (HFE-7000);~~
- tt. ~~3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-~~  
~~(trifluoromethyl) hexane (HFE-7500);~~
- uu. ~~1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea);~~

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vv. methyl formate (HCOOCH<sub>3</sub>); and

ww. Perfluorocarbon compounds which fall into these

classes:

(1) Cyclic, branched, or linear, completely

fluorinated alkanes;

(2) Cyclic, branched, or linear, completely

fluorinated ethers with no saturations;

(3) Cyclic, branched, or linear, completely

fluorinated tertiary amines with no saturations; and

(4) Sulfur containing perfluorocarbons with no

unsaturations and with sulfur bonds only to carbon and fluorine.

2. For purposes of determining compliance with emissions standards, volatile organic compounds shall be measured by the appropriate reference method in accordance with the provisions of 9 VAC 5-40-30 or 9 VAC 5-50-30, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as a volatile organic compound if the amount of such compounds is accurately quantified, and such exclusion is approved by the board.

3. As a precondition to excluding these compounds as volatile organic compounds or at any time thereafter, the board may require an owner to provide monitoring or testing methods and results demonstrating, to the satisfaction of the board, the amount of negligibly-reactive compounds in the emissions of the source.

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4. Exclusion of the above compounds in this definition in effect exempts such compounds from the provisions of emission standards for volatile organic compounds. The compounds are exempted on the basis of being so inactive that they will not contribute significantly to the formation of ozone in the troposphere. However, this exemption does not extend to other properties of the exempted compounds which, at some future date, may require regulation and limitation of their use in accordance with requirements of the federal Clean Air Act.

5. The following compound is a VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOCs and shall be uniquely identified in emission reports, but is not a VOC for purposes of VOC emission standards, VOC emission limitations, or VOC content requirements: t-butyl acetate.

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CERTIFICATION

REGULATION 9 VAC 5 CHAPTER 10, REVISION B05  
CONCERNING  
DEFINITION OF VOLATILE ORGANIC COMPOUND

I certify that this regulation is full, true, and correctly dated.

Signature: \_\_\_\_\_

Name of Certifying Official: Robert G. Burnley

Title: Director

Agency: Department of Environmental Quality

Date: \_\_\_\_\_